LAKE: SEWALL P (VLMP 23)
TOWN: ARROWSIC
COUNTY: SAGADAHOC

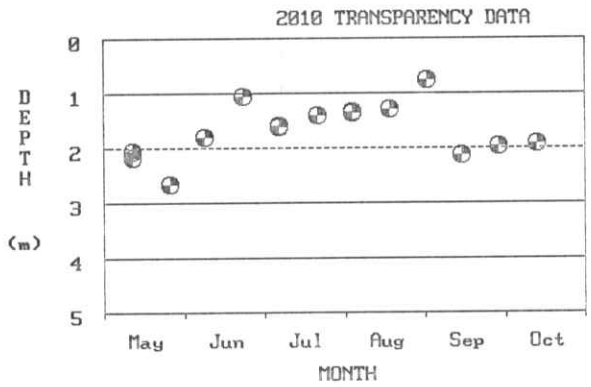
MIDAS: 9943
TRUE BASIN: 1
SAMPLE STATION: 1

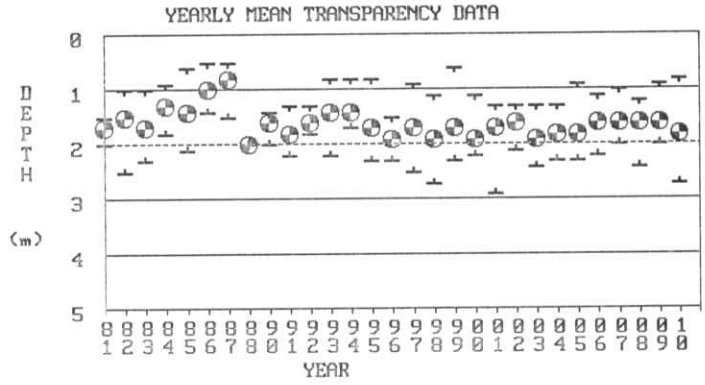
WHOLE LAKE INFORMATION
MAX. DEPTH: 3 m. (11 ft.)
MEAN DEPTH: 3 m. (9 ft.)
DELORME ATLAS #: 06
USGS QUAD: PHIPPSBURG
IFW REGION B: Belgrade Lakes (Augusta)
IFW FISH. MANAGMENT: Warmwater

TRUE BASIN CHARACTERISTICS
SURFACE AREA: 18.0 ha. (44.5 a.)
FLUSHING RATE: 1.61 flushes/yr.
VOLUME: 393841.9 cu. m. (319 ac.-ft.)
DIRECT DRAINAGE AREA: 0.88 sq. km. (0.34 sq. mi.)

PLEASE NOTE THE FOLLOWING: The SAMPLE STATION # refers to the location sampled. The term TRUE BASIN is used to define areas within a lake that are separated by shallow reefs or shoals and therefore function as separate lakes. There are approximately 50 lakes in the state that have more than 1 True Basin. True Basin Characteristics are now being included in the first section of these reports to enable users of the Phosphorous Loading Methodology to better evaluate the data. If there is no data for a particular True Basin, True Basin Characteristics must be obtained from the DEP. SEWALL P has 1 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:





Note: 2010 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

[* indicates that Secchi disk was visable at bottom of lake (or one reading used in calculation was visable)].

	MEAN COLOR	MEAN pH	MEAN ALK	MEAN COND.	TOTAL PHOS. MEANS (ppb)				SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES EPI PHOS			
	(SPU)		(mg/l)	(uS	EPI	SURF	BOT.	PRO.											
YEAR				/cm)	CORE	GRAB	GRAB	GRAB	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
1981	-	6.70	-	-	160	-	-	-	1.5	1.7	2.0	3	19.8	19.8	19.8	-	-	-	-
1982	100	6.40	3.5	159	51	-	-	-	1.0	1.5	2.5	6	10.9	26.2	50.3	-	-	-	100
1983	90	6.72	6.0	-	70	-	-	49	1.0	1.7	2.3	5	23.9	56.4	98.2	-	-	-	-
1984	70	6.82	4.0	-	82	-	-	53	0.9	1.3	1.8	5	38.5	62.1	135.5	-	-	-	-
1985	67	6.67	6.0	158	51	-	-	68	0.6	1.4	2.1	5	22.9	53.2	92.3	-	-	-	121
1986	90	6.90	4.0	130	77	-	-	-	0.5	1.0	1.4	6	27.6	45.0	62.4	-	-	-	-
1987	-	-	-	-	-	-	-	67	0.5	0.8	1.5	6	9.4	23.8	38.1	-	-	-	-
1988	-	-	-	-	-	-	-	52	2.0	2.0	2.0	1	18.6	18.6	18.6	-	-	-	-
1990	70	6.20	3.4	110	44	-	-	-	1.4	1.6	2.0	6	31.0	31.0	31.0	-	-	-	-
1991	48	6.19	4.0	160	43	-	-	-	1.3	1.8	2.2	5	35.9	35.9	35.9	-	-	-	-
1992	-	-	-	-	-	-	-	-	1.3	1.6	1.8	6	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	0.8	1.4	2.2	6	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	0.8	1.4	1.7	6	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	0.8	1.7	2.3	6	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	1.5	1.9	2.3	6	-	-	-	-	-	-	-

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SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

	MEAN COLOR (SPU)	MEAN pH	MEAN ALK (mg/l)	MEAN COND. (uS /cm)	TOTAL PHOS. MEANS (ppb) EPI CORE	SURF GRAB	BOT. GRAB	PRO. GRAB	SECCHI DISK (m.) MIN.	MEAN	MAX.	N	CHLOROPHYLL A(ppb) MIN.	MEAN	MAX.	TROPHIC STATE INDICES EPI PHOS C	G	SEC	CHL
YEAR																			
1997	-	-	-	-	-	-	-	-	0.9	1.7	2.5	5	-	-	-	-	-	-	-
1998	58	-	5.5	244	-	64	-	-	1.1	1.9	2.7	6	54.0	54.0	54.0	-	-	-	-
1999	70	-	3.0	25	51	-	-	-	0.6	1.7	2.3	6	89.0	89.0	89.0	-	-	-	-
2000	-	-	-	-	-	-	-	-	1.1	1.9	2.2	6	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	1.3	1.7	2.9	6	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	1.3	1.6	2.1	6	-	-	-	-	-	-	-
2003	-	-	-	-	40	-	-	-	1.3	1.9	2.4	6	-	-	-	-	-	-	-
2004	81	-	20.2	237	34	34	32	35	1.3	1.8	2.3	6	9.6	14.0	16.6	-	-	-	-
2005	-	-	-	-	31	-	-	-	0.9	1.8	2.3	6	4.7	10.8	17.4	-	-	-	-
2006	-	-	-	-	-	40	-	-	1.1	1.6	2.2	6	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	1.0	1.6	2.0	6	-	-	-	-	-	-	-
2008	81	6.79	3.8	166	9	33	-	-	1.2	1.6	2.4	6	1.6	22.7	49.6	-	-	-	96
2009	-	-	-	-	119	30	-	-	0.9	1.6	2.0	6	3.4	26.7	73.7	-	-	-	101
2010	-	-	-	-	-	29	-	-	0.8	1.8	2.7	6	5.6	17.8	33.5	-	-	-	89
SUMMARY:	75	6.52	5.8	154	62	38	32	54	0.5	1.6	2.9	29	1.6	35.7	135.5	-	-	-	101

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

	SAMPLE DATE															
DEPTH	09/01/09		09/15/09		09/29/09		08/03/10		08/17/10		08/31/10		09/14/10		09/28/10	
m	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm
0.0	20.9	7.5	19.7	7.5	17.4	8.8	24.9	7.2	23.8	6.4	24.7	9.5	19.2	9.3	17.7	7.4
1.0	20.7	7.0	19.8	7.5	17.4	8.9	24.7	7.2	23.6	6.1	24.3	7.7	19.2	9.1	17.7	7.3
2.0	20.7	7.1	19.7	6.7	17.1	7.7	24.9	6.2	23.5	6.0	21.8	6.4	19.2	8.9	17.6	7.2
3.0	20.4	3.0	19.2	3.6	16.8	7.0	23.3	0.3	23.2	2.0	21.2	1.4	19.2	8.2	17.6	6.9

WATER QUALITY SUMMARY

SEWALL Pond, Arrowsic

Midas: 9943, Sample Station #1

The Maine Department of Environmental Protection (Maine DEP) and the Volunteer Lake Monitoring Program (Maine VLMP) have collaborated in the collection of lake data to evaluate present water quality, track nuisance algal blooms, and determine historical water quality trends. This dataset does not include bacteria, mercury, or nutrients other than total phosphorus (TP).

Water quality monitoring datasets for Sewall Pond have been collected since 1981. During this period, 14 years of basic chemical information were collected, along with 25 years of Secchi disk transparency (SDT) measures (1981-88 and 1990-2006). In summary, the water quality of Sewall Pond is generally poor, based primarily on measures of SDT, TP, and chlorophyll-a (Chla). The potential for nuisance summertime algal blooms on Sewall Pond is high.

Water Quality Measures: Sewall Pond is a highly-colored (average 74 SPU) lake with an average SDT of only 1.6 meters (5.3 feet). The range of upper water column TP for Sewall Pond (w/o 160 extreme value in 1981) is 31 to 77 parts per billion (ppb) with an average of 52 ppb, while Chla ranges from 4.7 to 135.5 ppb with an average of 38.4 ppb. Recent dissolved oxygen (DO) profiles show minimal depletion in 'deep' areas of the lake, since Sewall Pond is too shallow (mean depth 3 m, or 9 feet) to thermally stratify in the summer. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal recycling) in Sewall Pond is low, based on recent oxygen measurements, but there may be rich bottom sediments which contribute to the high phosphorus, especially during the warmer summer months.

Comments: The flushing rate is the amount of time required for the lake water to be renewed each year and is a function of the watershed size and volume. The average annual flushing rate for Sewall Pond is 1.6 times, slightly higher than the state average of 1.0. Due to the nuisance summertime algae growth, Sewall Pond is listed by Maine DEP as "water quality limited." More work will be done in the coming years on Sewall Pond to determine the reasons for this and potential for lake restoration.

Nutrient Management: Sewall Pond is on the Maine DEP/EPA 2004 303(d) list of waters non-attaining Maine water quality standards. A Phosphorus Control Action Plan (PCAP) and Total Maximum Daily (Annual Total Phosphorus) Load report was approved by EPA, following Public Review, on 10 March 2006. The Sewall Pond EPA review and approval letter, as well as the full report, can be found on the following Maine DEP web-page: http://www.maine.gov/dep/blwq/docmonitoring/tmdl2.htm.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the Internet at http://www.lakesofmaine.org/ and/or http://www.maine.gov/dep/blwq/lake.htm, or telephone the ME-DEP at 207-287-3901 or the VLMP at 207-783-7733.

Filename: sewa9943, revised: 04-02-07, by: dbh